

The Federal Carl D. Perkins Career and Technical Education Act of 2006 provides the authority to the Nebraska Department of Education to distribute federal funds to eligible schools and community colleges through a competitive grant process to assist in building capacity to implement the Nebraska Career Education (NCE) Model and improve career technical education as a part of their career education programs.

Grants awarded;

Central Community College	\$54,936.00
Lakeview Community Schools	\$24,300.00
Lincoln Public Schools	\$26,815.00
Mid-Plains Community College	\$22,150.00
Northeast Community College	\$74,858.00
Papillion-La Vista Schools	\$66,250.00
Plattsmouth Schools	\$13,289.00
Sumner-Eddyville-Miller Schools	\$22,870.00

2009 Perkins Innovation Grants

Funded under the auspices of the

Carl D. Perkins Career and Technical Education Act of 2006

The purpose of the Perkins Innovation Grant Award Program is to assist local educational agencies (LEAs) in building their capacity to implement the Nebraska Career Education (NCE) Model and improve career technical education as a part of their career education programs.

Eligible recipients include the following:

- Public school districts that offer approved CTE programs of study as a part of their career education programs and that participate in the Federal Perkins Grant program
- Community colleges that offer career technical education programs and that participate in the Federal Perkins Grant program
- Educational Service Units that manage a Perkins consortium
- Consortia of public school districts, Educational Service Units and/or community colleges meeting the above mentioned criteria

Eligible recipients must meet one of the three criteria as required by federal law listed below:

- *Serving Rural Area:* For purposes of this RFP, "Rural" is defined as those eligible recipients located outside of the Omaha and Lincoln Metropolitan areas
- *Serving a high percentage of NCE students:* For purposes of this RFP, "high percentage of NCE students" is defined as more than 50% of the student population non-duplicated count, (if a secondary school, grades 9-12 only) enrolled in one or more NCE courses per year.
- *Serving a high number of NCE students:* For purposes of this RFP, "high number of NCE Students" is defined as 300 or more students non-duplicated count, enrolled in one or more NCE courses per year

Abstracts of Projects Proposed for Funding

Central Community College

Amount: \$54,936.00

The Central Nebraska Robotics Academy project, proposed by Central Community College (CCC) will address three significant challenges in the growing central Nebraska manufacturing sector: 1) a shortfall of highly skilled, technically savvy employees due to retiring baby-boomers; 2) too few young people entering the field due to negative perceptions of manufacturing careers; and 3) education's lack of curriculum, equipment and qualified instructors to train a high skilled labor pool.

Two 3-day academies will be held, providing high school career education instructors with robotics training, curriculum and a robot; which will be used to integrate robotics technology into their courses. By integrating robotics technology into the high school classroom, an estimated 1200 students will be introduced to robotics technology, potentially increasing the number of students who enter an advanced manufacturing career pathway.

The three day academies will be held at the Columbus and Hastings campuses. A robotics problem based competition, the Central Nebraska Robotics Challenge (CNRC), will be held the final day to showcase the skills gained during the academy. The CNRC will become an annual event for high school competitors, and will be a qualifying competition for the Robotics Championship of the Americas

Lakeview Community Schools

Amount: \$24,300.00

Lakeview Community Schools in partnership with CCC, UNO's College of Education, UNL's College of Engineering, and the Peter Kiewit Institute will create a Summer Solar and Photovoltaic professional development program for science, technology, engineering, and mathematics (STEM) disciplines. This proposal will use the Nebraska Career Cluster Model to guide faculty and students through the industrial, manufacturing, and engineering systems career field with a focus on applied science and mathematical skills used in high demand, high technology career fields. This project is an outcome and expansion of the partnerships formed over the past five years with the MEC project and builds on a recent National Science Foundation grant CCC received September 1, 2009. CCC will coordinate with the above partners and invite other school districts to participate in the project.

The project will include hosting a three-day Summer Solar/Photovoltaic Institute (SSPI) in Columbus, Nebraska. This institute will be offered through CCC with instructional assistance from UNL and UNO. The SSPI experience will help high school, middle school and college teachers learn how to integrate renewable energy into STEM curriculum using solar/photovoltaic kits. The twenty high school, middle school, and community college STEM instructors will have the opportunity to take this course for graduate credit through the UNO College of Education. Lessons developed by participant instructors will be available for STEM instructors throughout Nebraska.

Lincoln Public Schools

Amount: \$26,815.00

Lincoln North Star High School (LNS) will build capacity in their Industrial, Manufacturing and Engineering curriculum through the purchase of an industry-standard CNC router to teach the engineering process and manufacture student-designed products. LNS does not currently have any CNC application or production capacity. Industrial technology teachers will be provided professional development by industry partners. Students will utilize the CNC

technology across multiple STEM classes to learn the design process while maximizing the conservation of natural resources. Transferable technical skills will be taught with MasterCam software utilized by industry and postsecondary programs. Student projects will be manufactured through electronic transmission of files at Lincoln North Star, collaborative work throughout ESU 18 schools, business and community projects, and possible regional schools. The LNS SkillsUSA club will market student-designed projects as a school enterprise project in coordination with a business plan developed by CTE and academic teachers in the STEM Academy at Lincoln North Star

Mid-Plains Community College

Amount: \$22,150.00

Career Academies have been building Career Pathways for high school students across the nation for over 30 years. MPCC has several active career academy programs in other career fields that have demonstrated our capacity to successfully partner with area high schools. MPCC also offers a flexible dual-credit program to all area schools. Due to the rural nature and complexities of running a rural high school, there are currently no 4+2 model Career Academies at any of the high schools in the MPCC service area. Area high school administrators understand the need to engage more students in the health sciences as demonstrated in a 2009 survey of the most desired Career Academy focus areas. Based on this survey data, MPCC seeks to increase the capacity of both the high school and the College to offer and coordinate Health Science Career Academy at three area high schools of various sizes.

The Comprehensive Career Academy model would be offered upon completion of this initial capacity building grant. This project will strengthen existing secondary and postsecondary alignments by clearly articulating a Health Science Career Program of Study for interested junior and senior high school students at three rural high schools in the MPCC service area. Once established, the project will serve as a model for rural schools across Nebraska and potentially across the nation. The establishment of the Health Science Career Academy will provide interested area students with a clear Career Program of Study to build on their career goals.

The three key objectives that must occur in order for MPCC to reach this goal are: Objective 1: Establish and strengthen secondary/postsecondary alignment of health science coursework at three flexible levels of involvement. Objective 2: Provide professional development opportunities for key secondary and postsecondary staff. Objective 3: Provide school counseling and career guidance to Health Science Career Academy students during their sophomore, junior, and senior years. MPCC can offer schools dual-credit or college credit using delivery models to include on-site, distance learning, and on-line. Innovation dollars will be utilized to formalize agreements, provide professional development opportunities, and develop Health Science Career Academy career guidance and counseling materials.

Northeast Community College

Amount: \$74,858.00

The United States became the largest generator of wind power in the world, producing enough electricity to power more than 5 million homes in 2008 (Wind Energy for a New Era). In 2008, wind installations increased by an even larger rate (50% with 8,545 MW added) than they did in 2007 (45% with 5,249 MW added), bumping up wind power's five-year average annual growth rate (2004-2008) to 32%. The new wind projects installed in 2008 represent an investment of \$17 billion – the largest capital investment in the U.S. electricity sector that year. Wind power is also a job creation dynamo, creating 35,000 jobs in 2008 alone despite the economic downturn and providing a broad range of business and employment opportunities in different regions of the country (Windpower outlook 2009).

According to the 20% Wind Energy by 2030, the economic impact of wind power could:

- support roughly 500,000 jobs in the U.S., with an annual average of more than 150,000 workers directly employed by the wind industry;
- support more than 100,000 jobs in associated industries (e.g., accountants, lawyers, steel workers, and electrical manufacturing);
- support more than 200,000 jobs through economic expansion based on local spending;
- increase annual property tax revenues to more than \$1.5 billion by 2030; and
- increase annual payments to rural landowners to more than \$600 million in 2030.

In order to respond to this emerging industry, Northeast Community College (NECC) has developed the first wind technology program in the state. The program was launched in the fall of 2009, with 22 students enrolled and 3 on the waiting list. NECC partnered with the American Association of Community College and the Wal-Mart Workforce Economic Opportunity Initiative to develop curriculum and to build the foundation to begin offering courses. NECC has made renewable fuels a priority and is focusing on "going green". The high demand for employees in this emerging industry has put this project at the forefront of many initiatives at NECC.

There are three proposed activities that NECC will implement to continue to build the program. NECC will host a "train the trainer" workshop that will prepare secondary instructors to teach a part of the curriculum in their high school. A Green Energy Camp will be held on NECC's campus highlighting careers in the manufacturing cluster. Both of these events will promote renewable energy programs and build a better understanding of what a career in this industry entails. Equipment purchased with grant funds will be used at both of the events to demonstrate the types of skills and training a student would need for employment. The equipment will also expand the existing program at NECC and enhance the skills of students currently in the program of study. The end goal of the project is to build the capacity of secondary instructors to teach industry specific coursework in their classrooms, provide career information for high school students.

Papillion-La Vista

Amount: \$66,250.00

"A Career Ready person is one who capitalizes on their personal strengths, talents, education, & experiences to bring value to the workplace and the community through their performance, diligence, ethics, and responsible behavior." A state-wide group of Nebraska leaders including: major employers, educators from both secondary and post-secondary institutions, individuals from the Departments of Labor and Education, representatives of non-profit organizations and members of the State Board of Education, recently developed this definition of what a "career ready" student would look like. They also developed a list and defined the attributes of ten major knowledge, skills, and behaviors that represented "Career Readiness".

The Nebraska group was able to prepare a strong foundation for the on-going work that needs to be done in the State of Nebraska. Papillion-La Vista School District would now like to take the next step and develop a district-wide long range plan for curriculum and instruction that implements the work of the state group. The plan needs to address P-12 and onto 14 and 16--it was evident that we can't wait until high school to start addressing career readiness.

Papillion-La Vista School District in the past year, updated its comprehensive long-range facility plan. Part of the process included a detailed examination of housing and community growth patterns. Olsson Associates gathered and mapped current and future population growth in the Papillion-La Vista School District. Educational Facility Planning and Management,

L.L.C. gathered and analyzed current facility use across the District, and worked with staff and patrons to identify future changes to educational programs that may impact facilities use and transportation needs. The gathered population, facility and programmatic information was merged and analyzed to provide a road map for future decision-making with respect to resource needs and allocation priorities.

With the above study completed, the district now needs to continue planning for the future in the areas of curriculum and instruction. The objective of this project is to take the State's definition and the knowledge, skills, and behaviors that represents "Career Readiness" and create a vision and action plan for curriculum and instruction in the Papillion-La Vista School District through the year 2020.

The district will utilize the services of Innovation Labs LLC to:

- (1) Convene a Sponsor Group of diverse perspectives and experiences
- (2) The Sponsor Group will assist in the development of a pre-event web site with the purpose of providing appropriate background information and research related to the future of curriculum and instruction and to stimulate thinking.
- (3) Co-design a 2-day collaborative design session in which the group will develop the main elements of the long range plan
- (4) Create a product that will illustrate the plan/model that can be used by the district and shared with others in the State of Nebraska.

Plattsmouth

Amount: \$13,289.00

What does it mean to be career ready? Recently, leaders from all over Nebraska decided that a career ready person is one who capitalizes on his/her personal strengths, talents, education, and experiences to bring value to the workplace and the community through his/her performance, diligence, ethics, and responsible behavior. Although much can and should be done in the classroom to help students be career ready, class work is not enough. A key component of an effective program is exposure to the work environment. Through this exposure, students can see the relevancy of and apply content knowledge to work place settings. They can learn to market themselves to a multitude of businesses, observe relationships and networking in work environments, and learn to adapt and function in a variety of work cultures. Plattsmouth students have multiple career pathways open to them through class work. Forty five percent of PCSD seniors were concentrators and there are eight career clusters and nineteen pathways open to students. However, only about 5% of those students are involved in field-based classroom career education experiences. Plattsmouth Community School District (PCSD) developed a Career Education Advisory Committee (CEAC) in 2008 and is using the input of the committee to strengthen its courses and begin to design career academies. Since the PCSD mission statement is to improve student academics and behavior, as well as to foster civic engagement opportunities, CEAC discussions turned to ways students could participate in field-based community service projects that develop career skills, knowledge, and dispositions.

PCSD and its business/career partners are very interested in using Perkins Innovative Grant funds to add a field-based component to its career education program. Students involved in this program will be collaborating with business and community partners to: 1) provide community awareness services, 2) participate in and organize community service projects, and 3) develop and expand upon partnerships between the school and the community. Imagine, students from multiple career related organizations and courses coming together regularly to assess their individual strengths and skills, review community needs, and then plan a community service

project. With the support of local businesses, students from many career pathways could start their own store in downtown Plattsmouth, provide entertainment and resources for community events such as Cruisin' Main (an annual car show), and launch a project where giant P's are created by students and displayed around town. This component will dramatically strengthen the PCSD career education experience.

The overall goals of this program are to have participating students meet PCSD academic standards and to increase by 10% the number of students involved in field-based career experiences. Through these activities, PCSD expects 90% of the participating students to be able to: 1) articulate the relevancy of course content (academic and career - based) in community career fields 2) apply course (academic and career –based) content through authentic challenge projects requiring innovation, creativity, and problem solving, and 3) explain how their interests, skills, and knowledge would match with those needed in the career/business in which they volunteer.

The success of this program will be evaluated using four data sources: 1) academic data from NeSa-R and Stars Math assessments, 2) disaggregated counts of the number of students completing one of the three required tasks successfully, and 3) the results of surveys related to all three objectives and completed by all student involved in the program, and 4) feedback from community partners on the organization of the program, the quality of student projects, and the ability of students to match their interests and skills to career culture in which they volunteered.

Sumner-Eddyville-Miller

Amount: \$22,870.00

The SEM Technology Innovation and Career Enhancement Program will improve 9th-12th grade student achievement, partner with Mustang Country Community Development, Central Community College, Dawson Area Development and local businesses to promote economic viability in the community and will provide students with real-life, career-oriented, technology infused curriculum that includes inquiry and problem solving activities inside and outside the classroom.

SEM students will work with local businesses as advisors, laborers, and decision makers. Through this program, SEM students will gain experience in business development and promotion and will apply English, math, business and technology skills to their work with MCCD, local businesses and Dawson Area Development. Students will have the opportunity to develop innovative problem-solving skills, initiate the use of technology as a business resource, and develop higher order thinking skills.

Program activities include making websites for area business owners, building a self-sustaining greenhouse business, designing, developing and budgeting for landscapes on public property in the three communities, learning interviewing techniques, journalism methods and writing skills, developing computer skills, graphing algebraic relations within and across classroom assignments, using electronic resources (CD-ROM, software, online resources, and multimedia presentation tools) across the curriculum in a variety of classes, exploring and solving problems using patterns and functions in an excel spreadsheet, learning to navigate excel graphs and charts, creating statistical data that shows available housing and current census data (for the MCCD website), keeping record books that are financial, entrepreneurial and placement oriented and building a resume based on their high school careers.